

AMENDMENTS TO THE SPECIFICATION:

Please amend the following paragraphs as indicated:

[0002] Various services now provide voice and non-voice access to Internet data. A caller may access a “Voice Portal” or “Voice Site” by simply dialing a number advertised by the company providing the Voice Access service. The caller will hear a greeting that requests the caller to “speak” or “enter” specific commands. As an ~~[example]~~example, a caller may ask the system to provide him/her with the latest ~~[whether]~~weather information by simply speaking a command, or pressing a DTMF button on the phone. The information provided to the user may be pre-recorded and accessed from a database, or it may be accessed from a page similar to those available on the Internet. The mark-up language used to code the page may be VoiceXML or any other type of XML-based coding language. Some legacy systems may use proprietary or less commonly used methods for connecting the system to back-end data servers.

[0003] A dropped call occurs when a call session is disconnected before completion. The reason for session loss can be due to an undesired interruption or by intentional abandonment. The problem is that there are ~~[not]~~no existing ways to return to the call session that was terminated before completion. Users have to begin new sessions and repeat the steps that they had performed earlier in order to follow a prematurely terminated session through to completion. As an ~~[example]~~example, a

caller is making a purchase on his phone, he selects the merchandise, speaks the shipping and billing address, and then loses the call prior to completing their purchase. In all existing [systems]systems, the caller would need to [do all that again] repeating the afore-mentioned steps.

[0004] The present invention allows the caller to call back, identify himself and continue from where the call was dropped. An alternative [possibility]use is for the caller to start the purchase by making a call, go through multiple steps, and hang up when payment information is requested. He will then switch to a data device (e.g. WAP browser on his phone or a Personal Digital Assistant), and enter the credit card information through the data device.

[0009] When a caller makes the first call to the system, he will identify himself either automatically or manually before starting any transaction. The [current] present invention will register the identification of the caller along with the session data. Session data is saved in [the]a Session Management Gateway (e.g., such as Session Management Gateway)(7) in Fig. 1) in between each step of the transaction. If the caller hangs up prior to completion of [transaction]transaction, the session data will not be lost. When the caller calls back, he is identified once again, and his session will be mapped to the existing one. At that point the caller will be able to continue the same transaction from the point where it was cut-off. A caller could re-establish the

same transaction from any point regardless of what device is used throughout each phase of the transaction. For example, the user could call back with the same mobile phone (1) used to originate the session or use a different device such as an office phone or PDA.

[0015] With [Reference]reference to Figs. 1, 2 and 3, a software-based method is provided in accordance with the present invention to allow a caller to interact with data and applications in multiple phases using multiple devices or a single device. The solution comprises four main components, that is,

- a Session Management Gateway (7) capable of interacting with an application (9) from the one side (i.e., using standard Internet protocols for connection to Internet based applications) and multiple client interfaces such as a Telephone Interface (3) or a Data Device interface (5) from the other side, and also capable of maintaining the transaction session with the Application (9) separate from interaction sessions with client devices, and capable of maintaining the interaction session with the application (9) in a database (8) even if no client device is connected at that moment to the session pertaining to the said transaction.
- a Data Device Interface capable of interacting with data devices equipped with display, keyboard, sound interface, location sensor,

etc. Data device may have any combination of one or more human or machine data sources which can relay user input (e.g. a keyboard) or produce data automatically (e.g. a location sensor) as well as modules which can present data (e.g. a display that shows the data to a human, or a relay that uses the data to control an engine).

- a Telephony Interface that allows callers to access their sessions using any type of voice interface devices (e.g. a mobile phone (1)), and is capable of presenting the data to the user in audible fashion, and also capable of collecting input from the user in spoken fashion (spoken commands) as well as other forms such as DTMF input.
- A Database (8) which maintains transaction sessions controlled by Session Management Gateway (7).

[0018] In accordance with another aspect of the present invention, the caller may reconnect to the system using a different device than the one used to establish the original connection, as shown in Fig. 2.

[0021] In accordance with yet another aspect of the present invention, a caller may access a proprietary back end data server (10), as shown in Fig. 3, instead of an application server (9) through Session Management Gateway (7).